Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of measuring a thermal conductivity of an object, comprising:

positioning a heat source between and in contact with a surface of the object and a surface of a heat resistant material;

aligning the object, the heat source, and the heat resistant material along a substantially vertical axis;

causing heat to flow along a heat flow path from the heat source into the object and an interior of the heat resistant material;

measuring a temperature of at least two spaced apart locations aligned substantially parallel to the vertical axis, the locations being against or inside the heat resistant material, within a short period of time substantially less than one hour after first causing the heat to flow; and

calculating the thermal conductivity of the object ~~from~~ based on the temperature difference between the spaced apart locations as measured within the short period of time.

2. (Previously Presented) The method of claim 1 wherein the heat source has a central area and an auxiliary area surrounding the central area.

3. (Previously Presented) The method of claim 1 wherein an externally exposed surface of the heat resistant material is covered with a cover member.

4. (Currently Amended) An instrument for measuring the thermal conductivity of an object to be measured, comprising:

a heat resistant material having a heat resistance;

a temperature difference measuring unit capable of measuring a temperature difference between ~~at least two locations~~a surface location spaced apart ~~about~~ from a second location of ~~or inside~~ the heat resistant material;

a heat generating unit configured to be placed vertically between the surface of the heat resistant material and a surface of the object;

wherein the heat generating unit is configured to generate heat between the surface of the object and the surface of the heat resistant material, causing heat to flow from ~~said~~ the surfaces of the object and the heat resistant material ~~into an interior~~ to the second location of the heat resistant material;

the temperature difference measuring unit is configured to measure ~~a~~ the temperature difference of the heat resistant material within a short period of time substantially less than one hour after heat is first generated; and

the thermal conductivity of the object ~~to be measured~~ is obtained from ~~a~~ the temperature difference, measured within the short period of time, between the surface location and the second location of ~~at least two locations positioned vertically along the heat flow on the surface of or internal to~~ the heat resistant material, the second location is aligned substantially vertically from the surface location.

5. (Previously Presented) The instrument of claim 4 wherein the heat generating unit comprises a main heat generating section for generating heat in a central area and an auxiliary heat generating section for generating heat in an area surrounding the main heat generating section.

6. (Previously Presented) A method of determining a thermal conductivity of a heat insulating material, comprising an inspection step in which heat is generated between the heat insulating material and a heat resistant material and caused to flow through the heat

insulating material and the heat resistant material, and a measurement step in which a temperature difference of the heat resistant material is initiated and is terminated after a period of time substantially less than one hour, and the thermal conductivity of the heat insulating material is obtained from a temperature difference between at least two points of the heat resistant material.

7. (Previously Presented) The method of claim 6 wherein a heat generation area is divided into a central area and an area surrounding the central area.

8. (Currently Amended) A method of ~~manufacturing a heat insulating material with~~ measuring an object's thermal conductivity, ~~pre-measured, comprising steps of~~of the method comprising:

generating heat between a surfaces of the object and a surface of a heat resistant material;

~~causing~~ receiving a first amount of the generated heat ~~to flow at least substantially vertically from said surfaces of~~ at the surface of the object ~~and the heat resistant material into an interior of the heat resistant material~~;

receiving a second amount of the generated heat at the surface of the heat resistant material;

receiving at least a portion of the second amount of generated heat at a second location of the heat resistant material;

measuring a temperature difference between the surface location and the second location of the heat resistant material, the second location ~~of at least two~~ spaced apart ~~locations~~ and aligned substantially, vertically parallel to the ~~vertical axis~~surface location, ~~the location being against or inside the heat resistant material, within a short period of time after heat is initially generated~~; and

calculating the thermal conductivity of the object ~~from~~ based on the temperature difference, as measured within a short period of time after heat is initially generated~~the short period~~, between the ~~spaced apart locations aligned substantially parallel to the vertical axis, the~~

~~location being against or inside~~surface location and the second location of the heat resistant material.

9. (Previously Presented) The method of claim 1 wherein the object is a heat insulating material.

10. (Previously Presented) The method of claim 1 wherein the object is a vacuum insulation material.

11. (Previously Presented) The method of claim 1, further comprising steps of predetermining a calibration curve showing a relation between the thermal conductivity and the temperature difference and applying the measured temperature difference to said calibration curve to determine the heat conductivity of the object.